

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

10/531368

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/JP2004/000959

International filing date (day/month/year)
30.01.2004

Priority date (day/month/year)
30.01.2003

International Patent Classification (IPC) or both national classification and IPC
H04B1/38

Applicant
CASIO COMPUTER CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

Box No. II Priority

1. ☒ The following document has not been furnished:

- ☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
- ☒ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

Box No. IV Lack of unity of invention

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees, the applicant has:

- ☒ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ not paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

☐ complied with

☒ not complied with for the following reasons:

see separate sheet

4. Consequently, this report has been established in respect of the following parts of the international application:

- ☒ all parts.
- ☐ the parts relating to claims Nos.

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-6, 8, 10, 11, 13-15
	No: Claims	7, 9, 12
Inventive step (IS)	Yes: Claims	
	No: Claims	1-15
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item IV:

- 1 This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Group I (claims 1 to 8)

A wrist-worn communication apparatus comprising:

- a device,
- a band for wearing the device on a user's wrist,
- a speaker unit disposed on the band (claim 1) or on a support member (claim 5) or on a pivotable support member (claim 7), the speaker facing in a transverse direction of the band, and
- a microphone disposed on the band (claim 1) or on a support member (claim 5) or on a pivotable support member (claim 7), the microphone being placed as to face in a direction perpendicular to a surface of the band.

Group II (claims 9 to 15)

A wrist-worn communication apparatus comprising:

- a device,
- a band for wearing the device on a user's wrist,
- a communication unit having a key-in unit provided on an opposite side of the user's wrist, on which the device is worn,
- a hinged lid comprising a display provided thereon,
- a speaker unit provided on the lid on the opposite side of the display unit from the hinge,

- a microphone unit provided on the opposite side of the key unit from the hinge (claim 9) or at a position remote from the speaker unit (claim 12).

It is therefore considered that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3 PCT).

1.1 The only features common to all the independent claims are represented by:

A wrist-worn communication apparatus comprising:

- a device,
- a band for wearing the device on a user's wrist,
- a speaker unit, and
- a microphone unit.

These features are disclosed by document EP-A-572252 (see abstract, column 2, lines 44 to 50, column 3, lines 31 to 35, and figures 1 and 2) and therefore do not represent any contribution to the prior art. Therefore they cannot be considered as "special technical features" for the purpose of Rule 13.2 PCT. These features have the technical effect that a communication apparatus is provided, which allows the transmission/reception of sound and that can be carried on a user's wrist.

The remaining features are not the same or corresponding, that is they have different technical effects and are related to different technical problems.

In fact the special technical features of group 1 (the speaker facing in a transverse direction of the band and the microphone facing a perpendicular direction of the band) solve the technical problem of how to use the directivity characteristic of the speaker and the microphone. In the first group of invention the problem is solved by the particular orientation of the speaker and the microphone.

The special technical features of group 2 (a communication unit having a key-in unit provided on an opposite side of the user's wrist, on which the device is worn, a hinged lid where a display and a speaker are provided, the speaker being on the opposite side of the display from the hinge, and the microphone being placed on the opposite side of the key-in unit from the hinge or at a position remote from the

speaker) solve the problem of how to provide a wrist-watch communication apparatus that is more compact and more comfortable to use than the devices known from the prior art. The problem is solved by providing the communication unit with the microphone and a hinged lid with the speaker, on the opposite side of the user's wrist, the microphone and speaker being placed sufficiently apart from each other. In this way a user is able to carry out a communication without unnaturally bending his/her arm.

- 1.2 Thus the two groups of inventions do not have any special technical features in common, nor they have any corresponding special technical features as meant by rule 13.2 PCT as they relate to different technical problems having two different solutions. Hence Rule 13.1 PCT is not satisfied and the application contains two inventions, which are not linked by a single inventive concept.

Re Item V:

- 2 Reference is made to the following documents:

- D1: EP-A-0 572 252 (AMERICAN TELEPHONE & TELEGRAPH) 1 December 1993 (1993-12-01)
- D2: US-B-6 311 071 (ANDERSON MARLYN J ET AL) 30 October 2001 (2001-10-30)
- D3: EP-A-0 684 704 (AT & T CORP) 29 November 1995 (1995-11-29)
- D4: WO 98/05148 A (NAKATANI KOICHIRO ;NIHON VELBON SEIKI KOGYO (JP)) 5 February 1998 (1998-02-05)
- D5: EP-A-0 907 279 (NOKIA MOBILE PHONES LTD) 7 April 1999 (1999-04-07)
- D6: WO 01/61970 A (CALDANA FRANCO ;CALDANA MARCUS (IT)) 23 August 2001 (2001-08-23)
- D7: EP-A-0 782 308 (FERNANDEZ MARTINEZ JOSE IGNACI) 2 July 1997 (1997-07-02)

FIRST INVENTION (Claims 1 to 8)

- 3 The subject matter of **independent claim 7** is not new in the sense of Article 33(2) PCT.

Document D1 discloses (the references in parentheses applying to this document) a wrist-worn communication apparatus (see abstract, "a portable radio telephone device which is in the form of a wristwatch" and column 2, line 44, "wrist radiotelephone") comprising a device (see column 2, lines 49 to 54); a band for wearing the device on a user's wrist (see column 2, line 47, "band" and figure 6, "10"); a support member (see column 3, line 13, "top layer" and figure 6, "12") attached pivotally by a pivot (see column 3, line 11, "a pivotable hinge" and figure 7, "18") in a predetermined area on the band (see figures 6 and 7), the support member having the form of a strip superimposable on the band in an extending direction of the band (see column 3, lines 12 to 15 and figures 1 and 2); a speaker unit provided on one end of the support member (see column 4, lines 25 to 26, lines 35 to 36 and figure 7, "20", "12A"); a microphone unit provided on the other end of the support member (see column 4, lines 25 to 26, lines 35 to 36 and figure 7, "22", "12B"); and a lock member (see figure 6, "16") which locks at least one end of the support member unlockably to the band (see column 4, lines 31 to 33, "When the release means is activated, the top layer 12 releases from the bottom layer 14").

- 4 The subject matter of **independent claim 1** does not involve an inventive step in the sense of Article 33(3) PCT.

In accordance with the features of claim 1, document D1 discloses a wrist-worn communication apparatus (see abstract, "a portable radio telephone device which is in the form of a wristwatch" and column 2, line 44, "wrist radiotelephone") comprising a device (see column 2, lines 49 to 54); a band for wearing the device on a user's wrist (see column 2, line 47, "band" and figure 6, "10"); a speaker unit disposed at a predetermined position on the band (see column 3, line 31, "a speaker is located on the unfastened end of the released layer" and figure 2, "20"); and a microphone unit disposed on the band so as to face in a direction perpendicular to a surface of the band (see column 3, lines 32 to 33, "the microphone is located either on the top surface of the bottom layer" and figure 2, "22").

The subject matter of claim 1 therefore differs from this known wrist-worn communication apparatus only in that:

- the speaker is placed so as to face in a transverse direction of the band, and
- the microphone is disposed close to the speaker.

The problem to be solved by the present invention may therefore be regarded as how to provide a wrist-worn communication apparatus than can efficiently use the directivity characteristics of the speaker and microphone when the device is in use.

The solution proposed in claim 1 cannot be considered as involving an inventive step for the following reasons.

The skilled person, when faced with the same problem, would consult documents dealing with wrist-worn communication apparatuses, would find document D2, which deals with the same problem and that discloses the same solution (i.e. placing the speaker and the microphone close to each other and in a perpendicular orientation, see D2, column 6, lines 52 to 56 and figures 2 and 4) and would regard the incorporation of this solution in the apparatus defined by document D1 as obvious thus arriving at an apparatus as defined by claim 1.

Hence claim 1 does not satisfy the criterion set forth in Article 33(3) PCT because the subject matter contained therein does not involve an inventive step.

- 5 The same reasoning applies, *mutatis mutandis*, to the subject matter of independent **claim 5** that differs from claim 1 only for minor constructive details. Claim 5 is therefore considered not inventive (Article 33(3) PCT) as well.
- 6 Dependent claims 2 to 4, 6 and 8 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1 to D4 and the corresponding passages cited in the search report.

SECOND INVENTION (Claims 9 to 20)

- 7 The subject matter of **independent claim 9** is not new in the sense of Article 33(2) PCT.

Document D5, which is considered to represent the most relevant state of the art, discloses a wrist-worn communication apparatus (see abstract) comprising: a device having at least a time piece function (see column 3, line 33, "a separate device such as a watch" and figure 3, "50"); a band for wearing the device on a user's wrist (see column 2, line 42, "wrist strap" and figures 1 to 3 "40"); a communications unit (see column 2, line 39, "mobile communicator" and figure 1, "1") having a key-in unit (see column 3, line 13, "keyboard" and figure 2, "32") provided at a predetermined position on the band on an opposite side of the user's wrist, on which the device is worn from the device (see column 3, lines 35 to 37, "the device 50 is attached to the opposite side of the wrist strap compared with the mobile communicator" and figures 3 and 4); a lid (see figure 2, "20" and "30") attached openable through a hinge (see column 3, line 2, "hinges" and figure 2, "13") to the communications unit, the lid comprising a display unit (see column 3, line 11, "display" and figure 2, "21") provided thereon; a microphone unit provided on the communications unit on the opposite side of the key-in unit from the hinge (see column 3, line 4, "microphone" and figure 2, "31"); and a speaker unit provided on the lid (see column 3, line 5, "earphone" and figure 2, "11").

- 8 The subject matter of **independent claim 12** is not new in the sense of Article 33(2) PCT

Document D5 discloses, according to all the features of claim 12, a wrist-worn communications apparatus (see abstract) comprising: a device comprising at least one of a communication function (see column 2, line 39, "mobile communicator" and figure 1, "1") and a key-in unit (see column 3, line 13, "keyboard" and figure 2, "32"), a band for wearing the device on a user's wrist (see column 2, line 42, "wrist strap" and figures 1 to 3 "40"); a lid (see figure 2, "20" and "30") attached openable by a hinge (see column 3, line 2, "hinges" and figure 2, "13") to the device in the transverse direction of the band (see figures 2 and 4), the lid comprising a display unit provided on an inner surface thereof (see column 3, line 11, "display" and figure 2, "21") that faces the device when the lid has closed the device (see figures 1 and 2), a speaker unit provided on the lid on the opposite side of the display unit from the hinge (see column 3, line 5, "earphone" and figure 2, "11"); and a microphone unit provided on one of the device and the lid at a position remote from the speaker unit (see column 3, line 4, "microphone", lines 8 to 10, "in this way enough space is created between the microphone 31 and the earphone 11", and figure 2, "31").

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/JP2004/000959

- 9 The features of the dependent claims 10, 11 and 13 to 15 relate to design details which are either directly disclosed by document D5 or that are derivable from the prior art documents D6 and D7 (see the relevant passages as cited in the International Search Report) without any inventive activity, as defined by Article 33(3) PCT, being involved.
- 10 The subject matter of claims 1 to 15 is however industrially applicable (Article 33(4) PCT).